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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,244	06/25/2004	Shizuo Iwasaki	Q82272	8919

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EXAMINER	
MAKI, STEVEN D	
ART UNIT	**PAPER NUMBER**
1733	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/500,244	IWASAKI, SHIZUO	
	Examiner	Art Unit	
	Steven D. Maki	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 October 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 6-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 6-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 October 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Japan 220

3) **Claims 1-2 and 6-7 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Japan 220 (JP 2000-255220).**

Japan 220 discloses a pneumatic radial tire having a tread comprising a pair of shoulder block rows, a pair of central block rows, three circumferential grooves, and transverse grooves. See figure 1. The central blocks have one end opening sipes 7. The one end opening sipe 7 in the central block opens to the outer circumferential groove instead of the circumferential groove at the equatorial plane of the tire. The sipe 7 has a length Ls of 50-100% (e.g. 75%) block width La. Since the sipe 7 in the central block opens only to the outer circumferential groove, the rigidity of the center side region of the central block is higher than that in the shoulder side region of the central block.

The tire of claim 1 is anticipated by Japan 220. In any event, it would have been obvious to one of ordinary skill in the art to form the sipe 7 in the central blocks such that S2 (sipe sectional area at shoulder side region) is 1.4 to 2.0 times S1 (sipe sectional area at center side region) in view of Japan 220's teaching to locate a one end opening sipe 7 only at the shoulder side region of the central block such that sipe length Ls is 50-100% (e.g. 75%) of block width La to improve driving and braking performance and prevent damage such as chip and crack.

With respect to "a cut depth of the sipe changes in the width direction", figure 2 of Japan 220 illustrates a rounded bottom corner for the blind end of the sipe and thereby satisfies "a cut depth of the sipe changes in the width direction".

As to claim 2, Japan 220's tread has four block rows.

As to claim 6, sipe 7 is a one end opening sipe.

As to claim 7, the claimed width of the unopened part of the sipe being 5-15% of a block width would have been obvious and could have been determined without undue experimentation in view of Japan 220's teaching to locate an one end opening sipe only at the shoulder side region of the central block such that the length of the unopened part is 0-50% such as 25% (sipe length Ls is 50-100% such as 75% of block width La) to improve driving and braking performance and prevent damage such as chip and crack.

Europe 397

4) **Claims 1-3 and 8-9 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Europe 397 (EP 333,397).**

Europe 397 discloses a radial tire having the tread comprising blocks, circumferential grooves and lateral grooves. The shoulder blocks have both end opening sipes with varying depth. See figures 6, 9 and 10. The varying depth (difference in depth between portions S1 and S2) of the sipes causes the block to have a "shoulder side region" having a rigidity less than the rigidity of the "center side region".

As to claim 1, the claimed tire is anticipated by Europe 397's tire. With respect to the ratio of S2/S1 being 1.4 to 2.0, claim 1 fails to specify the location (e.g. center of block) of the boundary between the center side region and shoulder side region and thereby fails to require a different tire than Europe 397. In any event: It would have been obvious to one of ordinary skill in the art to locate the sipes in the blocks such that S2/S1 is 1.4 to 2.0 since Europe 397 teaches providing the blocks with sipes such that the center region side is more shallow than the shoulder region side to appropriately reduce rigidity of the blocks to thereby reduce wear in the shoulder regions and improve traction and braking forces.

With respect to "a cut depth of the sipe changes in the width direction", Europe 397 teaches the sipe being shallower at the center side region of the shoulder block. See figure 9 or figure 10.

As to claim 2, Europe 397's tread comprises four rows of blocks. Claim 2 does not require a longitudinal groove at the EP of the tire.

As to claim 3, Europe 397 teaches the sipe being shallower at the center side region of the shoulder block.

As to claim 8, Europe 397's shoulder sipes are both end opening sipes.

Claim 9 does not appear to require the shallow cut depth to have the claimed width of 5-40% of the block width. In any event: it would have been obvious to one of ordinary skill in the art to provide the shallow cut depth with a width of 5-40% of the block width since Europe 397 teaches providing 100% or only a portion of the sipe with the deep depth to control ground contact pressure. See figures 8 and 10.

5) **Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Europe 397 (EP 333,397) as applied above and in view of Japan 526 (JP 2000-185526).**

As to claims 6 and 7, it would have been obvious to one of ordinary skill in the art to locate the sipes in Europe 397's blocks such that (a) S2/S1 is 1.4 to 2.0 (claim 1), (b) "a cut depth of the sipe changes in the width direction" (claim 1) and (c) the sipe is an one end opening sipe (claim 6) having an unopened part with a width of 5-15% of a block width (claim 7) since (1) Europe 397 teaches providing the blocks with sipes such that the center region side is more shallow than the shoulder region side to appropriately reduce rigidity of the blocks to thereby reduce wear in the shoulder regions and improve traction and braking forces and (2) Japan 526, also directed to a tire having sipes in shoulder blocks, suggests forming sipes with a one end opening configuration (figure 1) instead of a both end opening configuration (figure 4) in shoulder blocks which should deform moderately but not have excessively low rigidity to increase braking performance and reduce heel and toe wear (paragraphs 11 and 13 of machine translation).

6) **Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Europe 397 (EP 333,397) as applied above and in view of Yamaguchi (US 5,814,169).**

As to claim 9, it would have been obvious to one of ordinary skill in the art to provide the shallow cut depth with a width of 5-40% of the block width since (1) Europe 397 teaches providing 100% or only a portion of the sipe with the deep depth or varying depth along the entire length to control ground contact pressure (figures 8-10) and (2) Yamaguchi et al shows both end opening sipe with varying depth as shown in figure 12(c), 12(g) as being an alternative to depth along the entire length as shown in figure 12(b).

Remarks

7) Applicant's arguments filed 10-19-06 have been fully considered but they are not persuasive.

Applicant argues that Japan 220 fails to suggest "a cut depth of the sipe changes in the width direction". Examiner disagrees since the bottom corner at the blind of the sipe is rounded. See figure 2 of Japan 220. This rounded corner causes "a cut depth of the sipe to change in the width direction".

Applicant argues that the changing cut depth makes it easy to regulate the ratio of S2 to S1. Unexpected results cannot overcome a 102 rejection. Furthermore, no unexpected results commensurate in scope with the claims over Japan 220 has been shown. The claimed invention has not been compared with Japan 220 and claim 1 fails to require each area S1 and S2 to have a length equal to 50% of the block width.

Applicant argues that Europe 397 fails to teach sectional areas created by sipes as claimed. This argument is not persuasive. First: Claim 1 fails to specify the location (e.g. center of block) of the boundary between the center side region and shoulder side region. Claim 1 reads on area S1 having a length of 10%, 25% or 50%. Without specification of the boundary, all one end opening sipes and all both end opening sipes having varying depth can meet a sectional area ratio S2:S1 of 1.4-2.0. Second: Europe is not silent as to what the sectional area of the sipe should be along the length of the sipe. In particular, Europe 397 teaches changing the sectional area of the sipe from the center side end of the sipe to the shoulder side end of the sipe. See figures 9 or 10. The change in sectional sipe area due to change in sipe cut depth in figure 9 is gradual. The change in sectional sipe area due to change in sipe cut depth in figure 10 is relatively abrupt. Europe 397 is not silent as to why cut depth changes in figures 9 and 10. More specifically, Europe 397 explains that the cut depth changes to control ground pressure distribution in the widthwise direction of the tread to thereby decrease slip amount, reduce uneven wear and improve traction and braking forces. See page 4 lines 9-12 and page 3 lines 11-16.

8) No claim is allowed.

9) Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven D. Maki
January 7, 2007

Steven D. Maki 1-8-07
STEVEN D. MAKI
PRIMARY EXAMINER

FIG.3

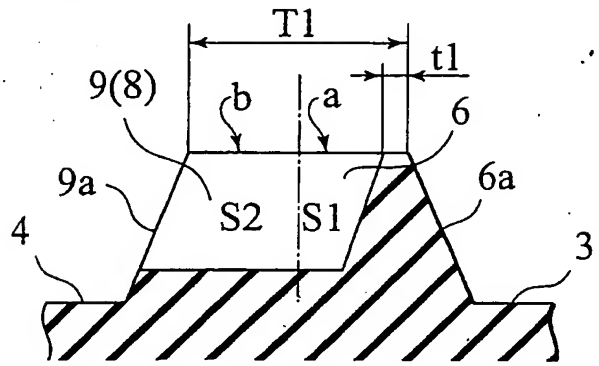


FIG.4

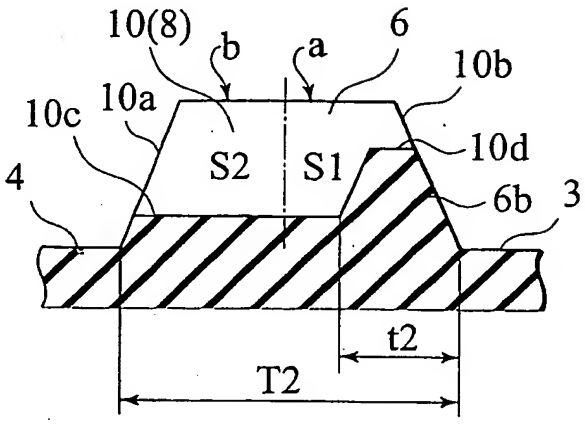
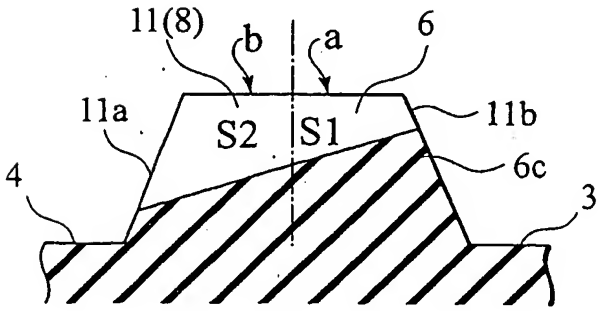


FIG.5



approved and accepted /h 1-8-07

FIG.6 **PRIOR ART**